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ABSTRACT

This booklet was prepared to help the user interpret the natural history of Blackbird Marsh Nature Trail in Escambia County, Florida, and serves as a guide to the animal and plant life. The publication is part of a series of illustrated guides designed for use by teachers and students of all levels in conjunction with field trips to the 1200-acre Gulf Islands National Seashore, site of the nature trail, as well as other foci of environmental interest. (Author/RH)

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# BLACKBIRD MARSH NATURE TRAIL

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# INTERPRETER'S GUIDE

TO

# BLACKBIRD MARSH NATURE TRAIL

PREPARED BY STAFF MEMBERS OF:

Environmental Studies Center
Gulf Islands National Seashore

under a grant from

THE FLORIDA STATE DEPARTMENT OF EDUCATION
Office of Environmental Education

*J. E. Hall*
*Superintendent of Schools*
*Escambia County*

*Printer: J. J. Miller*

*Illustrator: Henry F. Villarama*

ENVIRONMENTAL STUDIES CENTER
207 East Main Street
Pensacola, Florida 32501

## INTRODUCTION

This booklet has been prepared for the purpose of helping teachers and other group leaders to interpret the natural history of Blackbird Marsh Nature Trail. It is not necessary to be an expert naturalist in order to help students understand and appreciate their observations.

TO TAKE A CLASS FIELD TRIP TO BLACKBIRD MARSH, Escambia County Public School teachers:

Call the Environmental Studies Center (438-1140) and schedule a preliminary field trip on-site visit. During this pre-trip, teachers will be accompanied by the Environmental Studies Center director and all details will be discussed and questions answered concerning transportation, planning, interpretation, clothing, weather interference, time, etc. A date for your field trip should be scheduled by the Environmental Studies Center secretary.

ALL OTHER teachers and group leaders:

Call the Gulf Islands National Seashore ranger office (932-5307) and make similar arrangements with Park Service personnel.

THERE IS NO ADMISSION CHARGE TO THE PARK FOR EDUCATIONAL USE.

## THE ENVIRONMENTAL STUDIES CENTER AND MUSEUM

The Environmental Studies Center and Museum is designed to help teach ecology to the total population of Northwest Florida. A specialized library, a museum and laboratory equipment for reference and study is available to the public and teachers at 207 East Main Street (Main and Barracks) at the old L & N Marine Terminal building.

The Center reaches out into the community through the public schools providing field trip services to various nature trails in the area along with trips to the museum. Laboratory classes are provided for teachers on request during center trips. Films, filmstrips and records are used for further instruction in ecological concepts and problems of pollution.

The Environmental Studies Center is funded and operated by the Escambia County School Board. It was begun in 1970 with a Federal Grant under the ESEA Title III of The Elementary and Secondary Act of 1965. In August 1973, it became a total local effort.

## GULF ISLANDS NATIONAL SEASHORE

Clear blue water, mild surf, gently sloping beaches and a rich history dating back to the 16th century Spanish explorations of the New World--this is Gulf Islands National Seashore. The Florida section of this new National Park System area consists of Johnson Beach on Perdido Key, a group of fort ruins on the mainland, Naval Live Oaks, and parts of Santa Rosa Island.

Gulf Islands National Seashore became part of the National Park System under legislation enacted in January 1971. Recreation facilities are being developed, and additional land is being acquired to expand the Seashore to its authorized total size (125,000 acres).

ONE EFFECTIVE METHOD FOR INTERPRETING THE NATURAL HISTORY OF BLACKBIRD MARSH IS BY THE SPICE METHOD (actually a modification of the National Park Service strands approach to environmental education).

CONSIDER YOUR HAND:

S stands for similarities and differences. Look for ways in which the subject is like other things or how it is different. There are characteristics common to all organisms and no two things are exactly alike.

P stands for patterns. Patterns deal with the order of things. Look at a pine cone or the bark of a tree. Think of how bees are organized and what they do. Look at the sky, the sand, leaves of plants, a spider web, or listen to your heart beat. In other words, use your senses to locate and study the order of nature.

I stands for interaction or interdependence. Ask how plants depend on or interact with soil, soil with animals, animals with plants, animals with animals, and other combinations of one specific organism with another. Construct food webs or food chains--relate some of these to man.

C stands for continuity and change. Look for change--growth, color, seasonal, temperature, light, moisture. Search for examples of the life history (cycle) of specific organisms.

E stands for evolution and adaptation. A change in a trait (evolution in a species) does not take place unless there are large numbers of the organism, variety is present among these organisms, and environmental pressures are applied to the population. A considerable amount of time will pass before the new trait is apparent. *Example: On Santa Rosa Island hundreds of years ago, a population of mice (Peromyscus) somehow arrived from the mainland. If they were like those found on the mainland today, their color was brown. As the population grew, the darker varieties were caught and eaten by owls, their chief predator. The lighter colored ones (almost white) blended with the white sand background surviving to a greater degree. This breeding population became less and less dark since the survival trait (light color) is transmitted to the offspring.* Try to locate several adaptations and see how they enable the organism to survive.

ADDITIONAL INFORMATION ON THE STRANDS APPROACH MAY BE BORROWED FROM THE ENVIRONMENTAL STUDIES CENTER LIBRARY AS WELL AS ALL OF THE REFERENCES MENTIONED IN THIS BOOKLET.

BIOTIC COMMUNITIES CONTAIN A VARIETY OF HABITATS WITH SPECIFIC PLANTS AND ANIMALS USUALLY TOTALLY INTERDEPENDENT.

THE MARSH EDGE COMMUNITY -- The marsh edge is the meeting place of land and water. This blending of two distinctly different environments creates many habitats for a great diversity of producers and consumers. Ecologists call these blending areas ecotones. More kinds of living things are found in an ecotone than in the areas next to the ecotone.

THE SANDHILL COMMUNITY -- The sandhills are ancient sand dunes that are presently found inland from saltwater. Through succession, their appearance has changed considerably from the sand dunes that are found along the coastal strand. Rain drains rapidly through the deep sandy soils so producers that grow there must have special adaptations to survive dry conditions. Longleaf pines have deep taproots. Turkey oaks stand their leaves on edge to avoid direct sunlight. Cactus, ordinarily a desert plant, thrives in the sandhills. Many of the animals that live here dig burrows in the loose sand.

THE PINE FLATWOODS COMMUNITY -- The pine flatwoods are large expanses of level terrain which occupy about half of Florida's land area. They were formed in ancient times when the oceans covered much of the state. The flatwoods can be recognized by slash pines growing above saw palmettos and grasses. An occasional pond with cypress trees around it is a common sight in the flatwoods.

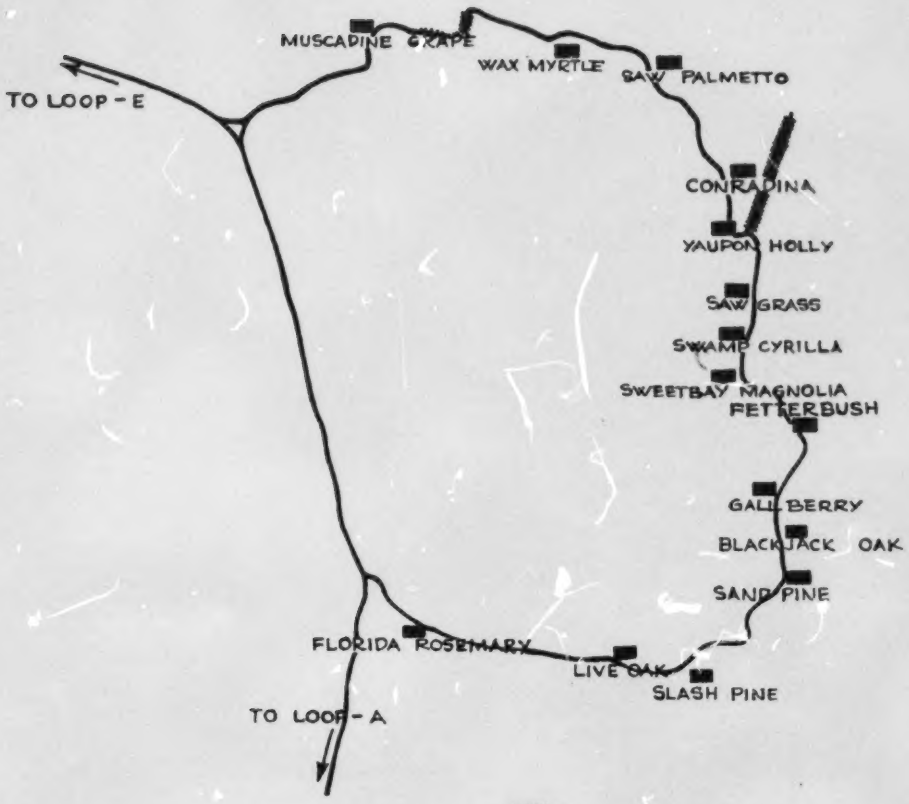
THE SAND PINE SCRUB COMMUNITY -- The sand pine scrub gets its name from the sand pine tree which grows only where there was at one time a shoreline. Many sand pine scrub areas were once islands when the oceans were higher than they are at present. A few shrubs, herbs, and grasses are found under the sand pines but large areas of the soil are covered with nothing but reindeer moss. The nutrient-poor soils limit the kinds of producers that can grow in the "scrub."

THE COASTAL STRAND COMMUNITY -- Over the past million years, the oceans have risen and fallen several times along all coastal areas throughout the world. This harsh, unstable, and rapidly changing environment is called the coastal strand. The coastal strand is said to have a low plant diversity because so few producers can survive in the nutrient-poor sand. Through the process of succession, plants will grow, die, decompose, and gradually build up the soil to allow other kinds of producers to grow where at one time only grasses could live.

MOST BIOTIC COMMUNITIES FOUND IN WEST FLORIDA ARE ALSO FOUND ON SANTA ROSA ISLAND. TRY TO DETERMINE WHICH ARE HERE. REMEMBER THAT THEY MAY BE A MIXTURE OF TWO OR MORE COMMUNITIES.

# MAP -- BLACKBIRD MARSH NATURE TRAIL

Gulf Islands National Seashore




KEY:

indicates established trail markers for the above named species.

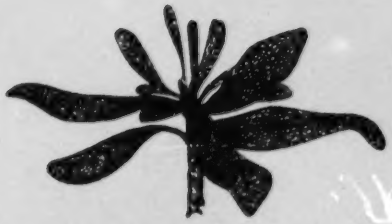
SPICE suggestions found in narrative.

boardwalks constructed by Youth Conservation Corps.

*This booklet is printed on 100% recycled paper.*

BUSH GOLDENROD

*Chrysoma pauciflosculosa*



The bush goldenrod is a shrub of dry sandy soils. It is found on the mainland in the sandhill community and here on Santa Rosa Island. It blooms in autumn with the golden flowers clustered on spikes above the rest of the plant.

SWAMP ROSE MALLOW

*Hibiscus moscheutos*

The swamp mallow blooms in mid-summer with large pink flowers topping a shrub four to eight feet tall. It grows in damp, low situations and can often be seen among the cattails and sawgrass of the Blackbird Marsh. The pink flowers are about three inches across and the pistil is yellow. The leaves are simple with toothed margins. The lower leaves are often three-lobed.

BUTTONBUSH

*Cephlanthus occidentalis*

It is also known as the Spanish Pincushion. Found along streams, ponds, and other low ground, the buttonbush is unmistakable when it flowers in mid-summer. The fragrant white flowers are clustered in a ball about one inch in diameter borne at the tip of the branches. The long pistils stick out in all directions from the ball. The flowers and leaves are opposite. The leaves are about three to seven inches long and simple.

GREENBRIAR *Smilax rotundifolia*

There are many species of Smilax which are unpopular with hikers because of their prickly stems. Indians used the tuberous roots of some species to make a starch food. The tender, growing tips are also edible, making an interesting snack while hiking or a natural addition to a green salad. This plant is sometimes called "Nature's Hairnet."

This plant helps provide cover for certain animals as it grows in close association with shrubs or trees.

QUESTIONS

How does this plant depend on other plants?

SUGGESTED ACTIVITY

Make a list (and research it VERY carefully) of other edible wild plants and the conditions in which they may be eaten.

NOTES

MOCKINGBIRD
Florida's State Bird

For further information:


Angier, Bradford. More Free-for-the-eating Wild Foods. Harrisburg, Pa.: Stackpole Books, 1969.

Gibbons, Euell. Stalking the Wild Asparagus. New York: David McKay Co., Inc., 1962.

Hardin, James W. and Jay M. Arena, M.D. Human Poisoning From Native and Cultivated Plants. Durham, North Carolina: Duke Univ., 1969.

DODDER or LOVE VINE

*Cuscuta gronovii*

At any place on the island you may find plants that are covered with yellow strands of dodder. This unusual plant is a flowering parasite, obtaining its nourishment from other living plants and sometimes killing them. It has no chlorophyll, the green pigment which allows most plants to synthesize food from carbon dioxide and water.

Other dependent plants include: Indian Pipe, a flowering plant without chlorophyll, living on the ground in hardwood hammock communities; Mistletoe, a plant with chlorophyll, living on hardwood trees such as oaks; Spanish Moss (not a true moss but a bromeliad, a member of the pineapple family), a plant with chlorophyll, living on trees but not a parasite.

QUESTION

What other dependent plant can you name?

ACTIVITIES

Survey the school yard for dependent plants at different times during the year.

Photograph or draw them for a notebook.

NOTES

Gray Squirrel and tracks

For further information:

Parker, Bertha Morris. Dependent Plants. Evanston, Illinois: Row, Peterson and Co., 1957.

Dependent Plants. Filmstrip (color). Row, Peterson and Co., 1958.

MILKWEED *Asclepias humistrata*

This milkweed is easily recognized by the unusual color of the leaves which are broad and 2 to 6 inches long. They are a pale green color prominently veined with white and pink. The stems are 1 to 2 feet long and the sap is milky. The gray or pale purple flowers occur in spring and summer and the seeds are distributed by the wind as they are attached to cottony fibers. Often black and yellow caterpillars are seen feeding on this plant.

Look for signs where something has eaten parts of the leaves. See if you can find an animal feeding on this plant. Another species, Fragrant Milkweed, is an endangered species. It lives on low pine land or near cypress swamps.

QUESTIONS

What kind of caterpillar is black and yellow? What does it become?

What are the best ways to protect endangered plants?

SUGGESTED ACTIVITY

Research this and other plants widely used as medicine in the past. Try to find out if milkweed is still used today.

NOTES

Rufous-sided Towhee

For further information:

Lucas, Richard. Nature's Medicines. West Nyack, New York: Parker Publishing Co., 1972.

Stone, Eric, M.D. Medicine Among the American Indians. New York: Hafner Publishing Co., 1962.

RED BAY *Persea borbonia*

An evergreen tree with simple, alternate leaves having a pleasant aroma when crushed, this plant is usually easy to recognize because of the fungus-caused galls on the leaves. Associated with moist soils along streams and swamp edges, it is the source of the bay leaves used for spicing foods.

Galls are specific to certain plants. If the plant dies, the gall organism might not be able to complete its life cycle.

QUESTIONS

How do the galls harm the plant?

SUGGESTED ACTIVITIES

Make a study of plant galls.

Examine galls on oaks, goldenrods, horse sugar and other plants.

NOTES

Raccoon and tracks

For further information:

Fischer, Richard B. "The Curious World of Plant Galls," Audubon Nature Bulletin. New York: National Audubon Society, 1964.

FLORIDA ROSEMARY

*Ceratiola ericoides*

This evergreen shrub has tiny evergreen leaves that remind one of a fir. Scattered throughout the dunes, the shrub is dark green with many small branches and often forms a symmetrical rounded bush several feet high. In the hot sun, it gives off an unusual and pleasant fragrance.

Keep looking on left until you see reindeer moss, a lichen. Break off a small piece and allow the students to examine it. During dry periods it may be quite brittle, but when damp or wet it is spongy.

QUESTIONS

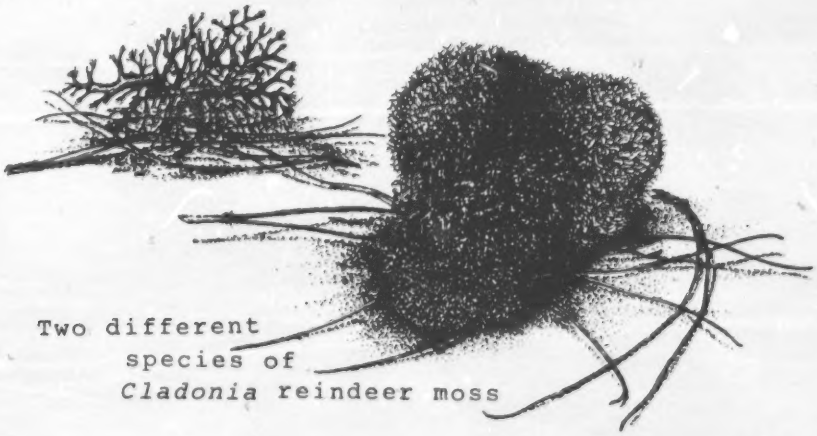
What kind of special adaptations must this plant have to survive?

SUGGESTED ACTIVITIES

Lichens are really two different plants incorporated into one and are important as food and in soil making in other parts of the world. Study how soil is made from rocks with the help of lichens.

Allow the students to feel the surface of a mat of true moss in this area.

NOTES



Two different species of *Cladonia* reindeer moss

For further information:


Hale, Mason E. How to Know the Lichens. Dubuque: Wm. C. Brown, 1969.

Lamb, I. Mackenzie. "Lichens," Scientific American, Oct. 1959. (Reprint). San Francisco: W.H. Freeman & Co.

Sears, Paul B. "Plants as Makers of Soil," Audubon Nature Bulletin. New York: National Audubon Society, 1970.

Thomson, John W. "An Illustrated Key to Common Lichens," Audubon Nature Bulletin. New York: National Audubon Society, 1958.

## LIVE OAK *Quercus virginiana*

The live oak is easily recognized by its evergreen leaves whose edges are curled under to make a boat-like shape. The tree usually branches near the ground and was widely used in shipbuilding because of its large, arching limbs. On the dunes near the water, it is commonly deformed by wind and salt spray to form a low, shrubby growth.

See if you can find any big branches that could be used as ribs of ships. Observe the dwarf huckleberry in back of the bench. The berries are edible (and delicious) when ripe in late spring.

QUESTIONS

What would this tree look like on the mainland in Pensacola? Would this tree serve as a home for animals? What plants are living in it?

SUGGESTED ACTIVITIES

See if you can find evidence that some animal may depend on the live oak for food.

Make a sketch using this tree (the acorns) in a food web.

NOTES

For further information:


Scheffer, Victor B. The Seeing Eye. New York: Charles Scribner's Sons, 1971.

Sears, Paul B. Patterns of Life. New York: Harper & Row, Pub., 1966.

Green, John I. "The Web--Introducing Ecology," Nature Study, Vol. 29, No. 2, Summer 1975. Savannah: American Nature Study Society.

## SLASH PINE *Pinus elliotii*

This pine occurs along streams, swamps and low lands. It can be recognized most easily by the bark pattern which is broken up into large plates covered with thin, papery, orange or purplish-brown colored plates. The needles are about 6 to 10 inches long and borne in bundles of 2 and 3. The wood and turpentine products are commercially important in the south.

It is said the name of this pine tree came from turpentine workers who made slashes in the tree to cause the sap to run into containers attached to the tree.

Where stands of pine are thick, seedlings cannot survive, leading to their replacement by oaks and other hardwoods. This is succession.

QUESTIONS

Feel the bark of this tree. Examine closely and see where animals may have changed the bark in some way. What may happen to this tree if the bark is damaged?

SUGGESTED ACTIVITIES

Examine the biotic (natural) communities near your school. Determine the stages of succession.

Research pine products. What industries in our area are devoted to manufacturing pine products?

NOTES

Six-lined Racerunner

For further information:

Ketchum, Richard M. The Secret Life of the Forest. New York: American Heritage Press, 1970.

SAND PINE *Pinus clausa*

This small pine is common on sandy coastal soils of Florida and Alabama. It is recognized by the dark green needles, 2 to 3 1/2 inches long, found in bundles of two and by the many cones which remain on the tree for several years. Its extensive root system helps hold the sand in place and it can withstand some salt spray.

Groups of people moving through the woods are seldom fortunate enough to see many of the animals that inhabit an area. Animals leave signs, though, and some of those signs can often be found here in the sand. Tracks of insects, raccoons, mice, rabbits, gray squirrels, skunks, or voles might be found here.

At other points along the trail, look for signs of digging or scratching, for bits of fur, leaves which have been chewed, and homes such as nests, mounds, or various chrysalides. A useful tool in establishing the presence of certain mammals and birds is the recognition of their scats (feces).

Birds, frogs, certain insects (such as cicadas) can often be identified by their sounds.

QUESTIONS

Look for signs which tell you that people have been on this trail. What can we do to prevent man from littering and damaging his environment?

H

f

SUGGESTED ACTIVITY

You may learn which animals visit your school yard or home if you prepare a sandy place for them. Smooth the sand with a board before dark. Check the area next morning for night animal visitors.

Make plaster of paris casts of animal tracks.

Striped Skunk & Tracks

For further information:

Murie, Olaus J. A Field Guide to Animal Tracks. Boston: Houghton Mifflin, 1954.

BLACKJACK OAK *Quercus marilandica*

This small oak has rather large leaves, about 6 to 7 inches long and 2 to 3 inches wide. They are slightly lobed with bristle tips. The acorns are about 3/4 inches long. It grows on dry, poor soils from Florida to southern New York.

Examine the upper surface of the leaves. How does this waxy covering help the plant?

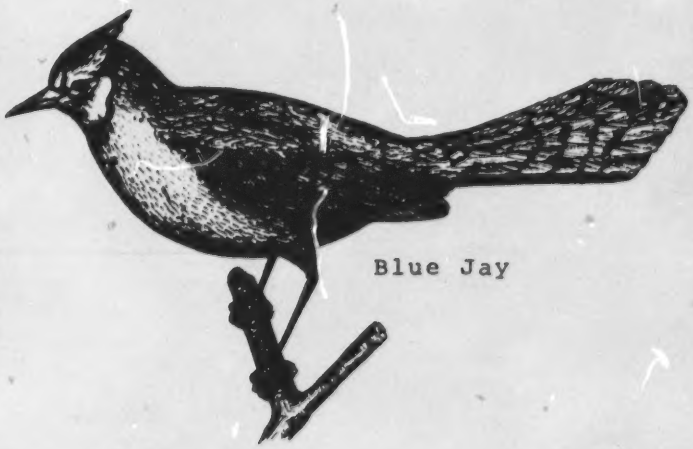
This plant lives in very poor soil, yet it must have nutrients to live. Where does it get them?

SUGGESTED ACTIVITY

Compare the soil around this plant with that found in a vegetable garden. How are the two soils alike? How are they different?

NOTES

Parasol Mushroom



Blue Jay

For further information:

U. S. Dept. of Agriculture. Soil Survey Escambia County Florida. Washington, D.C.: U.S. Government Printing Office, 1960.

GALLBERRY or INKBERRY *Ilex glabra*

This common holly forms large thickets 2 to 5 feet tall in damp, sunny areas. Its berries are inky black and bitter tasting when mature and remain on the plant all winter. The evergreen leaves are 1 to 2 inches long and have only a few teeth near the tip.

Other members of the genus Ilex include the American Holly and the Yaupon Holly.

QUESTIONS

Look around you. What do you see that is changing?

SUGGESTED ACTIVITIES

Experiment with colors from plants in the making of inks, dyes and paints. Make a painting from nature's colors. Remember to keep fingers out of mouths when working with plants and wash hands later. Caution students about poisonous plants.

Some plants which might be tried: Red cabbage, beets, beauty-berries (French mulberry), pokeberry (these are very poisonous), mullein, gallberries, yaupon holly, American holly.

NOTES

Green Tree Frog

For further information:

A Teacher's Preparation for Nature's Part in Art. Washington, D.C.: National Wildlife Federation, ed. & pub., 1972.

Grae, Ida. Nature's Colors: Dyes From Plants. New York: MacMillan Publishing Co., Inc., 1974.

FETTERBUSH or LANTERN BUSH

*Lyonia lucida*

Growing in swamps and along streams, the fetterbush is especially attractive when in bloom. The bell-shaped flowers hang downward along the stems while the fruits turn upward after they have formed. They have an odor of fresh honey. The leaves have a vein around the lower side of the margin which allows the plant to be easily identified.

An ecotone is the place where two communities meet. More organisms are usually found here than in either community. Try to locate an ecotone in this area and identify the communities involved.

QUESTIONS

What communities and ecotones are on your school grounds? At your home?

SUGGESTED ACTIVITIES

Map your school yard showing the biotic communities and the ecotones. Inventory the plants and animals found.

NOTES

Monarch Butterfly

Cottonmouth Moccasin

For further information:

Buchsbaum, Ralph and Mildred Buchsbaum. Basic Ecology. Pittsburgh: The Boxwood Press, 1957.

SWEETBAY MAGNOLIA *Magnolia virginiana*

A small tree or shrub found along swamp edges, the sweetbay is easily recognized by its leaves. They are bright and shiny green on top and whitish beneath. When the wind blows, the tree has a whitish appearance. The leaves are aromatic and the flowers look like a smaller version of the well-known Southern Magnolia blossom.

Too much water does not seem to harm this plant. It will grow in drier areas, but not well. When its red seeds are ripe, they are easily seen by birds and are quickly eaten. They may pass through the bird's intestinal tract and one day grow into another tree far away from the parent.

QUESTIONS

What other trees or shrubs do you know with red seeds that birds like?

SUGGESTED ACTIVITY

Find a seed cone on this magnolia (an old seed cone nearby will do) and estimate the number of seeds produced from this cone and from this tree.

NOTES

Cardinal

For further information:

U.S. Dept. of Agriculture. Invite Birds to Your Home. Washington, D.C.: U.S. Government Printing Office, July 1975.

Thomas, Jack, Robert Brush and Richard DeGraaf. Invite Wildlife to Your Backyard. Washington, D.C.: National Wildlife Federation.

SWAMP CYRILLA or RED TITI
*Cyrilla racemiflora*

This titi flowers in midsummer, the blossoms occuring in racemes about six inches long. It is often seen with bright red leaves in the winter and early spring. These red leaves are from the previous season and have been late in falling. This plant can form near impenetrable thickets along swamp margins.

BUCKWHEAT TITI
*Cliftonia monophylla*

This is another kind of titi which grows in the swampy areas of the island. This one blooms in early spring and its fragrant flowers are popular with honeybees. The leaves and flower racemes are smaller than those of the red titi or swamp cyrilla. Buckwheat titi is evergreen but the red titi loses most of its leaves during the winter.

Some other plants that live in swamps are: Cypress, red maple, tulip tree, black gum, tupulo gum, slash pine, red bay, wax myrtle, juniper, poison ivy, poison sumac, bamboo vine and sweet bay.

Fish Crow

QUESTIONS

How many of these do you know?

SUGGESTED ACTIVITY

Learn what some of these trees look like. Find out what they have in common.

For further information:


Wigginton, Eliot, editor. Foxfire 2. Garden City, N.Y.: Anchor Press, 1973.

U.S. Dept. of Agriculture. Beekeeping for Beginners, Bulletin No. 158. Washington, D.C.: U.S. Govt. Printing Office, Rev. 1971.

Johnson, James R. The Southern Swamps of America. New York: David McKay Co., Inc., 1970.

SAWGRASS *Cladium Jamaicensis*

Sawgrass grows in shallow fresh water or damp areas along streams and marshes on the island. The common name comes from the tiny, sharp teeth on the mid-rib of the leaves. The brown flowers and seeds are obvious throughout the summer, occuring on stems taller than the rest of the plant. This is the dominant plant of much of the Everglades.

This is a good place to look for blackbirds and listen for their calls. Try to identify other sounds of the marsh. Look for cattails and whitetop sedge here. Two ferns found here are royal fern and cinnamon fern.

QUESTIONS

How do you know if a blackbird is male or female?

Cattail

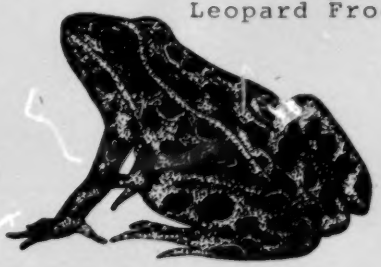
SUGGESTED ACTIVITIES

Feel of the sawgrass leaf very carefully (both ways).

Research as to why the color of the marsh water is red.

Speculate as to how a group of persimmon trees (normally found in a sandhill community) can live in this wet area (look to the right).

NOTES



Leopard Frog

For further information:

Mason, George F. Animal Sounds. New York: William Morrow & Co., 1948.

## YAUPON HOLLY *Ilex vomitoria*

This small-leaved evergreen shrub is a hardy relative of the well-known American holly. The dried leaves were used during the Civil War as a substitute for coffee since they are a source of caffeine. Too strongly brewed however, the leaves can induce vomiting. (Note the scientific name.) The berries ripen in the fall to a yellow-orange or red color.

The Guale Indians used to make large quantities of a drink called cacina. The men would drink large quantities of the brew until they vomited. The main purpose of this drink was to prevent kidney stones. The Seminole Indians are said to have used the leaves of yaupon in their famous Black Drink. Any man able to retain this drink was given the most honorable commission.

The berries are eaten by birds, especially robins in the early spring. Yaupon holly is also used for Christmas decorations.

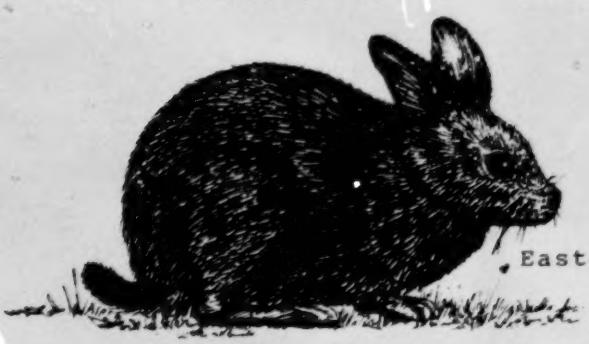
QUESTIONS

Does this plant grow in your school yard?

SUGGESTED ACTIVITIES

Set out a few of these shrubs in your school yard for habitat improvement.

Research plants used by the Indians for medicinal purposes.



Eastern Cottontail Rabbit and Tracks

For further information:

Stone, Eric, M.D. Medicine Among the American Indians. New York: Hafner Pub. Co., 1962.

Swanton, John R. The Indians of the Southeastern United States. Michigan: Scholarly Press, 1969.

CONRADINA *Canescens*

This small shrub belonging to the mint family grows on dry, sandy soils of Santa Rosa Island as well as the mainland coastal area. The tiny lance-shaped leaves are pale green, aromatic, and are clustered along the stems. It blooms in early spring with many small pale lavender flowers.

This plant adds much beauty to this area. Its flowers stay on the plant for several weeks.

ACTIVITIES

Crush one leaf and allow students to smell the minty aroma.

Learn what the following wild flowers look like and where they live. Be on the lookout for them and add to the list as you find others that you like.

| Name | Color | Community |
|---|---|---|
| Wild Basil | Red | Sandhills |
| Lantana | Multi-colored: Yellow to orange; pink to red. | Sandhills and urban |
| Yucca | White | Sandhills |
| Cardinal Flower | Crimson | Swamp |
| Trumpet Creeper | Orange | Swamp edge |
| Cypress Vine | Red | Disturbed areas |
| Morning Glory | Blue, violet, white | Sandhills |
| Queen Anne's Lace | White | Disturbed areas (field, roadsides) |
| Goldenrod | Yellow | Sandhills |
| Beauty Berry | Pale green flower clusters develop into purple drupes (fruit) | Sandhills and disturbed areas |
| Primrose | Yellow | Disturbed areas |

Sulphur Butterfly

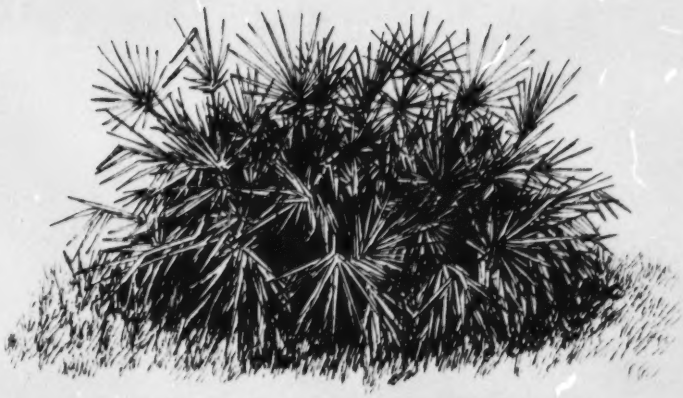
For further information:

Carson, Rachel. The Sense of Wonder. New York: Harper & Row, Pub., 1956

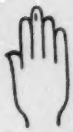
Porter, Eliot. In Wildness is the Preservation of the World. New York: Ballantine Books, 1962.

## SAW PALMETTO

*Serenca repens*



This palmetto is easy to recognize by touching the petiole of a leaf since the edges are made up of sharp saw teeth. This palm once had great value to the Florida Indians since its fruit was a staple food in their diet. Saw palmetto grows on sandy soils and is a common understory plant in many pine woods.



Paper wasps sometimes build their nests in saw palmettos. They also provide cover for lizards such as the five-lined skink. The slimy salamander may be found under old rotting stems. Be on the alert for rattlesnakes.

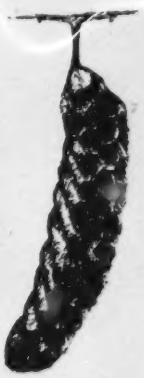
QUESTIONS

How will this clump of plants affect the soil?

SUGGESTED ACTIVITY

Feel (carefully) of a leaf petiole (the lower stem-like part) to see where the plant gets its name.

NOTES



Paper Wasp Nest

Five-lined Skink

For further information:

Angier, Bradford. How to Stay Alive in the Woods. New York: Collier Books, 1956.

WAX MYRTLE *Myrica cerifera*

A member of the bayberry family, this shrub has the aroma of bayberry candles. The berries have a large amount of wax and were once collected for candle-making. The leaves are dotted with a yellow resin which gives a golden-brown cast to the plant. The simple alternate leaves have a few teeth towards the tip and are very aromatic when crushed.

Several kinds of plants have different shapes of leaves on the same plant. See how many different shapes of leaves you can find on this plant. It is said that branches placed in kennels repel fleas.

QUESTIONS

Would this plant live on your school ground? Would it be helpful in providing habitat for wildlife?

SUGGESTED ACTIVITIES

As you cross the boardwalk, look in the water for cattails, royal fern and lizard's-tail. You may see frogs, blackbirds, or an anole lizard (commonly called a chameleon).

Study the shapes of leaves of the tulip tree. Although each tree is slightly different, all leaves on the same tree are alike. Study leaf shapes of red mulberry and sassafras. They are different on the same plant.

Make a leaf print notebook.

Learn how candles are made. Compare prices of a bayberry candle with that of an ordinary tallow candle.

Golden Silk Spider

Cicada

For further information:

Klots, Alexander B. and Elsie B. Klots. Living Insects of the World. Garden City, N.Y.: Doubleday, 1967.

"Make a Leaf Print Notebook This Summer," Curious Naturalist Supplement No. 8. Lincoln, Massachusetts: Massachusetts Audubon Society.

MUSCADINE GRAPE *Vitis rotundifolia*

This plant can climb high into trees by means of unbranched tendrils. The dark purple grapes ripen in late summer and are 1/2 to 1 inch across. They have tough skins but are quite tasty. The alternate, simple leaves may have a tendril or fruit cluster opposite them. The veins are prominent on the underside of the yellowish-green leaves.

Rootstock of this wild American grape was given to the French during the 18th century to replace their plants lost to a root disease. In turn, they gave United States grape growers favored cuttings which helped the American industry.

QUESTIONS

Look carefully at a leaf which has a streak or a meandering light color pattern on it. What might have done this?

SUGGESTED ACTIVITY

Wild yeast plants are usually found on the skin of ripe grapes. Scrape the skin of a commercial grape, place the scrapings in a drop of water and examine under a microscope.

NOTES

Brown Thrasher

*Black Rat Snake*

For further information:

Wigginton, Eliot, ed. Foxfire 3. Garden City, New York: Anchor Press, 1975. (Reference pages 317-320.)